Massachusetts Bay Transportation Authority

Emerging Transportation Network Company (TNC) environment and considerations for public transit

March 13, 2017

Why Transportation Network Companies (TNCs)?

1. **TNCs impact the transit ecosystem**: *While the full impact has yet to be seen, TNCs undoubtedly are changing the way people move across the region and engage with public transit.*

2. **There are opportunities for public transit and TNCs to complement one another:** *TNCs and public transit have distinct profiles that may be complementary. Under the appropriate guidelines and policies, TNCs could help public transit better achieve its goals.*

3. **Efforts by public agencies to engage TNCs are in their infancy**: *The MBTA should determine what role it would like to take in this emerging and evolving landscape: Watch & Wait or Active Participant.*

What has been said about shared mobility?

*"Shared modes **complement public transit**, enhancing urban mobility."*

-Shared Use Mobility Center, in a report conducted for APTA

*"Innovative mobility services **can provide broad mobility benefits while serving other societal goals,** but […] reaping those benefits will require informed policy making."*

-Transportation Research Board

*"The relationship between public transportation and emerging mobility options **only shows signs of strengthening** as emerging modes become more widespread, better understood, and hopefully more accessible to customers."*

-TransitCenter

*"A number of **environmental, social, and transportation-related benefits** have been reported from the use of shared mobility modes."*

-Federal Highway Administration

Source: Literature Review

Topics for discussion

1. Overview of TNCs
2. State regulations update
3. Current perspective on TNCs
4. Review of partnership pilots
5. Considerations and next steps for MBTA

The rise in Mobility as a Service (MaaS) is led by a number of new players in the transportation ecosystem

Focus of our discussion

Bikesharing

Hubway DIVVY

Short-term bike rental for individual periods of time enabled by docking stations throughout a region

TNCs

UBER lyft

Online platforms connecting passengers with drivers and automating reservations, payments, and customer feedback

Carsharing

zipcar enterprise

Access to car for less than one day; cars may be provided by an owning company or individual owners

Microtransit

chariot BRIDJ VIA

On-demand multi-passenger services along dynamically generated or fixed routes; transit-like service on a smaller and more flexible scale

Private shuttles

GO Bauer's

Shuttles making limited stops for specified riders; typically pre-planned routes

Ridesharing

scoop RideFinders

Addition of passengers to a private trip in which driver and passenger share a destination (e.g., carpooling, vanpooling)

Source: "Shared Mobility and the Transformation of Public Transit" (Transit Cooperative Research Program, 2016)

Even amongst TNCs there exist many options for riders with different fares and service levels

Basic Features
• Mobile app for on-demand service • Integrated GPS updates and credit card payments • No service tips for drivers; riders are instead prompted to rate their drivers

Increasing cost to rider ↓

Service	Description	Additional Features: Private ride	Additional Features: Capacity of 6+	Additional Features: Luxury car
UberPOOL **Lyft Line**	*Shared ride with 1-2 other passengers travelling complementary routes; lower cost and longer ride duration*			
UberX **Lyft**	*Private ride in a car that seats at least four people*	✓		
UberXL **UberSUV** **Lyft Plus**	*Private ride in a car that can seat at least six passengers*	✓	✓	
UberTAXI	*Private metered ride in a certified taxicab*	✓		
UberPREMIUM **Uber Black**	*Private ride in a luxury car*	✓		✓

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Working group has been working to implement August 2016 Massachusetts legislation regulating TNCs

AREA*	LEGISLATION COMPONENTS
Background Checks	• Two-part initial background check • Recurring background check every 2 years • Quarterly audit of driver certification and background check processes
Vehicle Inspection	• Second vehicle inspection in addition to annual personal motor vehicle check • Outfitting of vehicles with removable decals
Insurance	• Commercial insurance coverage of up to $1M while trip in progress
Fees	• $0.20 surcharge per ride (ends in 2026) • 5¢ to taxis, 10¢ to cities and town, and 5¢ to state transportation fund • Payment of commercial toll rate while on a trip and provision of ride data for auditing
Accessibility	• Accommodation of riders with special needs, including service animals • No additional charges or increased fares for riders with disabilities
Additional	• No prohibition to pick-up at Logan Airport or Boston Convention and Exhibition Center

Legislation in the process of being implemented

Notes: *Select areas of focus, not comprehensive
Source: Commonwealth of Massachusetts Session Laws, Acts (2016), Chapter 187

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Public transit and TNC experiences offer distinct strengths and weaknesses for riders, suggesting differing user preferences

Rider perspective

	Public Transit	TNCs
Strengths	• **High capacity** allows service to more riders at any given time within fixed geographies • **Right of way** on some routes make it the fastest travel mode for most people during the day • Existing infrastructure and government subsidies keep it the **cheapest option** for riders • Federally mandated to be **equitable**	• Tends to have **higher level of convenience** due to on-demand service, point-to-point delivery, and integrated payment • Tends to have **higher level of comfort** due to private vehicle or vehicle shared with few other riders • UberPOOL / Lyft Line options have become **cost comparable** with public transit in some scenarios • Wider **geographic range of service** than public transit
Weaknesses	• In some areas, requires **first / last mile travel** for riders (by foot, car, bike, etc.) • Long timeframe for planning and administrative requirements lead to **longer response time** to user needs • Tends to offer lower **personal comfort**, especially in peak travel hours	• Tends to be **more costly;** accessibility further limited by **dependence on smartphones and credit cards** • May not be **physically accessible** for all riders • Potential for **discrimination**

Source: Literature Review

Public Transit and TNC services incur different costs and benefits to providers, which may impact service offered

	Provider perspective	
	Public Transit	**TNCs**
Strengths	• **High capacity** of existing assets far exceeds potential capacity of TNCs combined • Fixed assets tend to **spur economic growth** • Transit is a **public service** with a strong economic multiplier effect	• Supply is **flexible and dynamic** – up to a point • **Minimal existing infrastructure** required, as most fixed costs are shouldered by drivers • High capitalization suggests **potential for profitability** • Service model based around **disruptive innovation**
Weaknesses	• High **fixed costs** to provide and maintain service • Long timeframe for planning and administrative requirements lead to **less short-term flexibility**	• **Not scalable** to the same extent as public transit due to road congestion • Ultimately **dependent on government infrastructure** (e.g., roads and parking) and **emerging legislation** with unclear impact • **Higher cost to serve** one customer (driver-to-passenger ratio is 1:1 or 1:2); unclear whether **current cost structure** is sustainable • Recent negative press around **safety incidents**

Source: Literature Review

Research to date has been limited, but study conducted by the Shared-Use Mobility Center begins to identify distinction between transit modes

KEY FINDINGS FROM STUDY

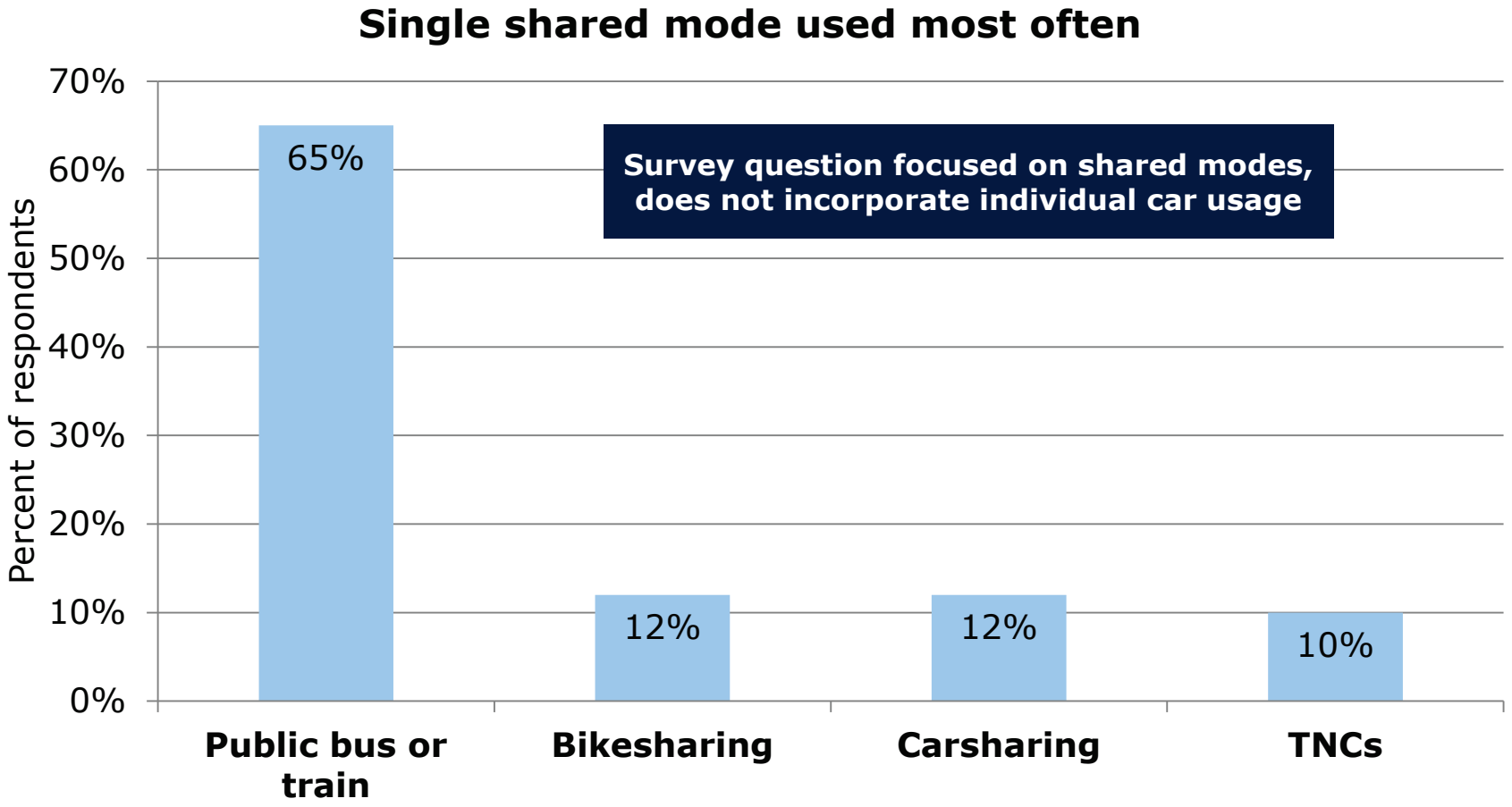
- Public transit (rail and bus) remains the **most frequently used** shared mode
- There are some **emerging trends in rider preference** for using TNCs:
    - Recreation and social trips
    - Late at night
    - Alcohol involvement
- **Relatively few people use TNCs to commute,** and those who do only do so occasionally
- Respondents report **many benefits** to increased use of shared transit modes:
    - Lower car ownership
    - Less driving
    - Increased physical activity
    - Decreased transportation spending

LIMITATIONS OF STUDY

- Conducted Sept-Oct 2015 and thus is already outdated in rapidly changing landscape
- Survey distributed by shared-mobility operators and transit agencies
    - In Boston, Chicago, and NYC survey distributed only through bikeshare operators
- Survey subject to the following skew:
    - Strong users of shared mobility
    - Convenience sampling
    - Online sampling
    - Urban respondents
- Overall received 4,551 at least partial responses (6% net response rate)
    - Low sample size in Boston (n=69)

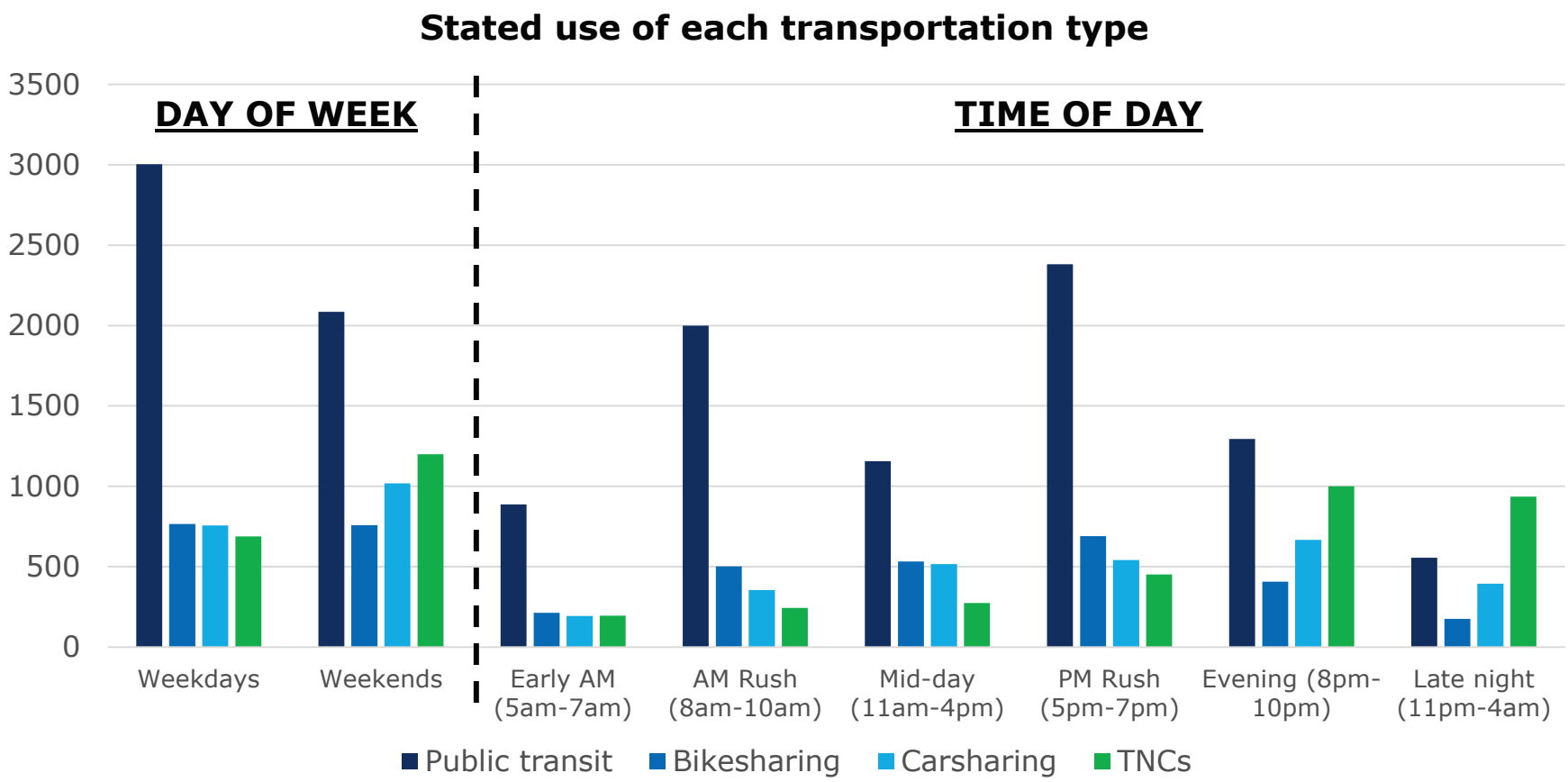
Source: "Shared Mobility and the Transformation of Public Transit" (Transit Cooperative Research Program, 2016)

Findings from study: For respondents who report using shared modes, public transit remains the most popular mode of shared transit



Source: "Shared Mobility and the Transformation of Public Transit" (Transit Cooperative Research Program, 2016)

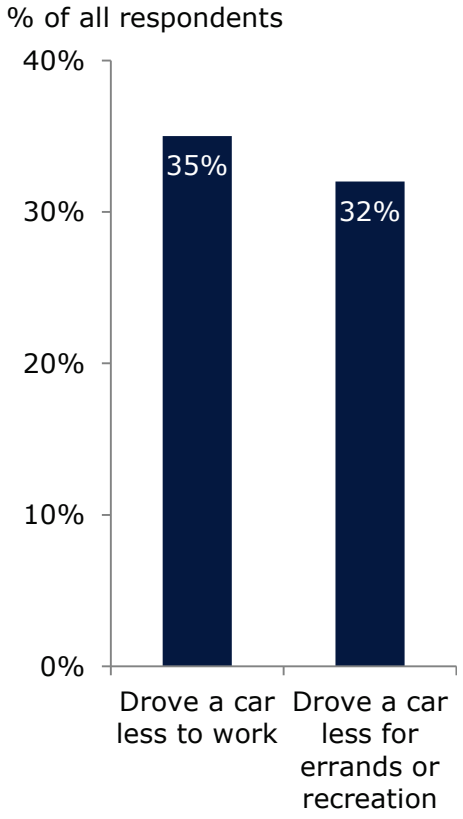
Findings from study: Public transit remains top choice for weekday commute; TNCs popular for trips during the evening and late at night



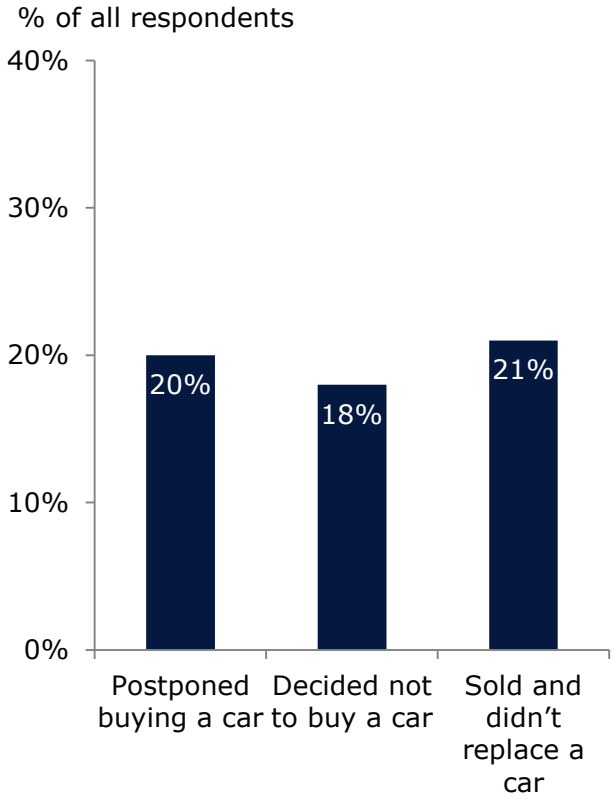
Note: Survey conducted amongst those who use shared modes; Survey question: "At what hours of the day and week do you generally use each form of transportation? (Check as many as apply)"; "Public transit" includes public bus and public train
Source: "Shared Mobility and the Transformation of Public Transit" (Transit Cooperative Research Program, 2016)

Findings from study: Mobility as a service (MaaS) is changing the way shared mode travelers use and own cars

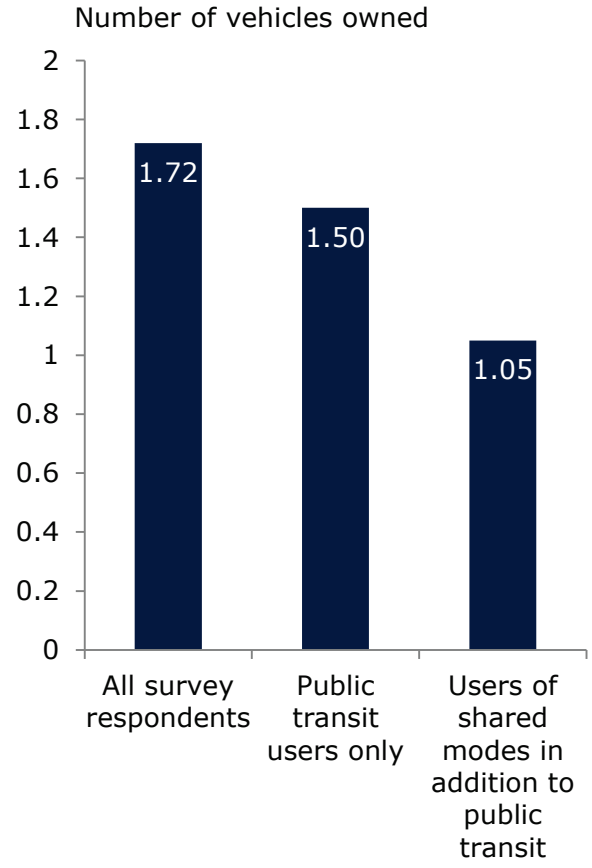
Car usage declined



Car ownership declined



Lower level of car ownership



Notes: Rates self-reported, as a comparison to behaviors before using shared modes
Source: "Shared Mobility and the Transformation of Public Transit" (Transit Cooperative Research Program, 2016)

There are a number of opportunities for collaboration between public transit and TNCs as well as threats to consider

OPPORTUNITIES

***Passive** – likely already underway*

- Improved access to riders through **"fringe" offerings**
  - *Geography:* First / Last mile connections for those who can't walk, drive, or bike to transit
  - *Time of day:* Early AM / Late night service
- Peak hour **"pressure valve"** where TNCs offer alternative for oversaturated public transit

***Active** – require additional action*

- **Subsidization of fringe offerings** such as First / Last Mile and Late Night Service
- **Data sharing** to better understand how people move
- Integrated **trip planning and fare payment**
- Improved link between transit options through **"Mobility Centers"** at transit stations (e.g., bikeshare hub, carshare resources)
- Potential ability to provide services at a **lower cost to riders**

THREATS

***Passive** – likely already underway*

- Erosion of public transit **ridership and revenue**
- **Crowding / congestion** at transit centers and on the streets

***Active** – require additional action*

- Weakening of transit as a **public service**
  - *Equity:* Reduction in equitable access
    - Unclear whether current cost structure is sustainable
    - Smartphone, Internet access, and credit card required
  - *Access:* Cherry picking or "cream-skimming" by TNCs choosing to operate only profitable routes
  - *Cost to society:* Elimination of transit jobs with costs potentially incurred elsewhere

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Internal: MBTA Paratransit pilot with Uber and Lyft launched in October 2016 has seen significantly higher overall usage with slightly decreased costs

400
Customers who are in the Pilot

72%
Customers who have taken an On-Demand trip

7,353
On-Demand trips taken in the Pilot

187
Customers who are on the Waitlist

+30%
Increase in all trips taken (RIDE + On-Demand) by pilot customers

2%
Decrease in overall cost to serve pilot customers

-71%
Difference between RIDE and On-Demand trip costs ($31 to $9)

-25%
Reduction in average cost / trip for all trips taken ($31 to $23)

Note: Data as of 1/23/17
Source: Internal MBTA data

External: Current pilots in other locations focus primarily on First / Last Mile coverage and tend to replace existing, costlier services

FIRST / LAST MILE

Pinellas Park, FL Density: 3000pp/sq mi	Altamonte, FL Density: 4600pp/sq mi	Centennial, CO Density: 3600pp/sq mi	Summit, NJ Density: 3600pp/sq mi	North Shore Comm. College (7K students)
• 6-month pilot launched in February 2016 • Implemented after funding for bus lines and light rail was reduced • 50% discount on taxi or Uber fare up to $3 for trips • Expected to cost $40K/year, replacing a $160K bus service with low ridership	• Launched March 2016 • Replaced plans for on-demand bus system to bring riders to commuter station • 25% discount on all Uber trips to or from commuter station • 20% discount on all Uber trips beginning or ending within city limits • Four other Central Florida cities joined in July 2016	• 6-month pilot launched in August 2016 • Implemented to replace dial-a-ride program, which offered subsidy of $21/person • Free Lyft Line rides to and from light rail station from within existing service area, 5:30 AM – 7 PM • Expected to cost $400K for full pilot, with city covering half the bill • Dial-a-ride program remains accessible throughout pilot	• 6-month pilot launched in October 2016 • Implemented to reduce parking congestion and avoid construction of additional parking • $2 Uber fare for trips to and from train station between the hours of 5 AM – 9 PM • Free for 100 parking pass holders • Expected to cost $167K/year	• Year-long pilot launched September 2016 • School subsidizes $10 for every trip between Danvers campus and nearby transit hubs (5 miles) during class hours (7 AM – 10 PM) • Expected to cost $40K compared to ~$100K for a campus shuttle • MBTA bus line linking college to public transit was discontinued in 2002 due to low ridership

Source: Literature Review

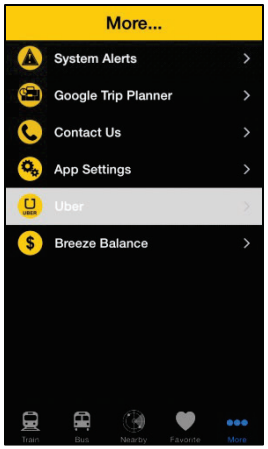
External: Other pilots have centered around mobile app integration and some late night service

INTEGRATED MOBILE APP

LATE NIGHT SERVICE

Atlanta, GA
Density: 3400pp/sq mi

- Launched Uber partnership in July 2015
- Public transit app can be used to access the TNC app
- $20 discount in first trip with Uber

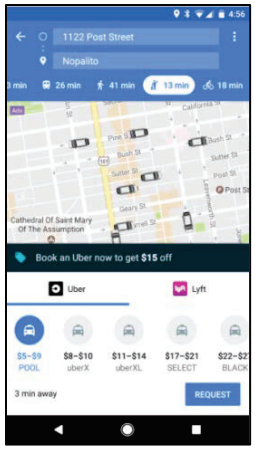


Dallas, TX
Density: 3600pp/sq mi

- Launched Uber partnership in April 2015, Lyft partnership in October 2015
- Public transit "GoPass" can be used to access the TNC app
- Received $1.2M grant from U.S. DOT in October 2016

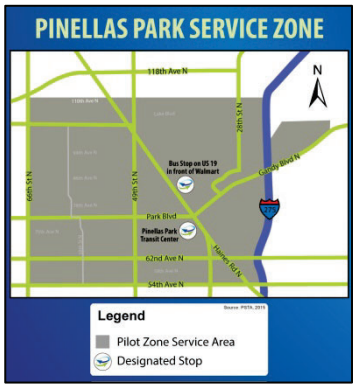
GoogleMaps integration

- Launched globally in January 2017
- Uber can be hailed directly through GoogleMaps app
- Has previously provided comparison of time and cost estimates across all transit options



Pinellas Park, FL
Density: 3000pp/sq mi

- Launched August 2016
- 23 free late night (9 PM – 6 AM) Uber rides per month for economically disadvantaged riders
- $300K funding from Commission for the Transportation Disadvantaged (TD)



Source: Literature Review

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The MBTA should align on a set of guiding principles when reviewing potential engagements with TNCs

COST

- *What is the direct cost to the MBTA? How is our business impacted?*
- *Are there any indirect costs (e.g., Labor) and who bears that burden?*
- *What is the cost of alternatives, existing or not?*

ACCESS

- *How does this affect access to geographic destinations?*
- *Which riders does this impact?*
- *How does this impact transit-dependent riders?*

SUSTAINABILITY

- *What are the backup options?*
- *What factors determine continued provision of the service?*
- *What is the environmental impact? VMT impact?*

EQUITY

- *What is the accessibility to all riders?*
- *What is the cost to the riders?*

QUALITY / SAFETY

- *How does this impact quality of transportation service to riders? Safety?*
- *What levels of quality and safety are required by public sector mandates?*

ACCOUNTABILITY

- *What standards need to be fulfilled? Who is ultimately accountable to these standards?*
- *What information is needed to evaluate performance?*
- *What resources are required to enforce and monitor?*

For discussion: Summary and next steps

1. The relationship between public transit and TNCs continues to evolve and the full mutual impact has yet to be determined

2. Ongoing pilots show potential for mutual benefit

For discussion

3. The MBTA should determine what role it would like to take in this emerging and evolving landscape:

WATCH & WAIT	ACTIVE PARTICIPANT
• What specific additional information do we need and how do we get it? • What's the "trigger point" for the MBTA to become an active participant?	• What guidelines and priorities do we adopt? • What arrangements do we want to pursue? Pilot program or other alternatives? • We have already been approached about Late Night service

4. In the long-term, the MBTA should consider how existing planning processes can account for TNCs

Questions?